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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/828,468 | 04/19/2004 | Kunio Maruyama | 72314/JPW/KBC | 5213 |

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EXAMINER

WEINER, LAURA S

ART UNIT PAPER NUMBER

1745

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/828,468

Applicant(s)

MARUYAMA ET AL.

Examiner

Laura S. Weiner

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004 and 26 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4-19-04; 6-28-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-10, 21 in the reply filed on 12-6-04 is acknowledged. The traversal is on the ground(s) that it would not be a burden to search the three inventions. This is not found persuasive because as stated previously the polymer gel electrolyte composition can be made by different methods as claimed in Group II and Group III in addition, Group I would require different searches than Groups II and III.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 11-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12-6-04.

3. The election of species requirement mailed 11-4-04 has been withdrawn.

Claim Rejections - 35 USC § 112

4. Claims 1-10, 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, it is unclear what the three-dimensional crosslinked structure

Art Unit: 1745

consists of because only a non-crosslinked polymer comprises (a) an ethylene unit and/or propylene unit and (b) an unsaturated carboxylic acid unit. It is unclear what the third crosslinked structure refers to.

In claim 2, there is no antecedent basis for "by weight of the crosslinked polymer matrix" cited in claim 1. There is no crosslinked polymer matrix cited in claim 1. Therefore claim 2 is vague and indefinite and does not further limit claim 1 from which it depends from.

Claim 4 is rejected because it is unclear what the first and second copolymerizable monomer units are because the claim refers to "a third copolymerizable monomer". Therefore there is no antecedent basis and the claim does not further limit claim 1 from which the claim depends from.

Claim 5 is rejected because it is unclear how this claim further limits claim 1 from which the claim depends from because claim 1 already cites that the non-crosslinked polymer is made from a polyalkylene glycol compound having one terminal hydroxyl group protected and a polymer containing an ethylene unit and/or propylene unit and unsaturated carboxylic acid unit.

Claim 8 is rejected because there is no antecedent basis for "wherein the crosslinked polymer matrix".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3-5, 7-10, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubota (5,270,137).

Kubota teaches in columns 3-4, a separator comprising monomers represented by Formula (1), Formula (2) and Formula (3) compounds. Kubota teaches in column 5, lines 60-64, that in conducting polymerization that any one of the compounds of general formula (1), (2) and (3) may be polymerized alone, or two or more of these compounds may be polymerized in combination with one another in an arbitrary proportion. Kubota teaches in column 9, lines 23-25, that 1-mol/l of LiBF₄ was used in a solution of propylene carbonate / dimethoxyethane.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kubota (5,270,137).

Art Unit: 1745

Kubota teaches in columns 3-4, a separator comprising monomers represented by Formula (1), Formula (2) and Formula (3) compounds. Kubota teaches in column 5, lines 60-64, that in conducting polymerization that any one of the compounds of general formula (1), (2) and (3) may be polymerized alone, or two or more of these compounds may be polymerized in combination with one another in an arbitrary proportion. Kubota teaches in column 9, lines 23-25, that 1-mol/l of LiBF₄ was used in a solution of propylene carbonate / dimethoxyethane.

Since Kubota teaches using the same non-crosslinked polymer comprising the same monomers for the polymer electrolyte then inherently the non-crosslinked polymer having a weight-average molecular weight of about 2000-800,000 must also be obtained.

In addition, the presently claimed property of a non-crosslinked polymer having a weight-average molecular weight of about 2000-800,000 would have obviously have been present once the Kubota product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota (5,270,137).

Kubota teaches in columns 3-4, a separator comprising monomers represented by Formula (1), Formula (2) and Formula (3) compounds. Kubota teaches in column 5, lines 60-64, that in conducting polymerization that any one of the compounds of general formula (1), (2) and (3) may be polymerized alone, or two or more of these compounds

Art Unit: 1745

may be polymerized in combination with one another in an arbitrary proportion. Kubota teaches in column 9, lines 23-25, that 1-mol/l of LiBF₄ was used in a solution of propylene carbonate / dimethoxyethane.

Kubota teaches the claimed invention as explained above except does not teach that the polymer gel electrolyte composition contains 1 part by weight of the non-crosslinked polymer, 0.1-2 parts by weight of the crosslinked polymer matrix and 3 parts by weight or more of the electrolyte solution.

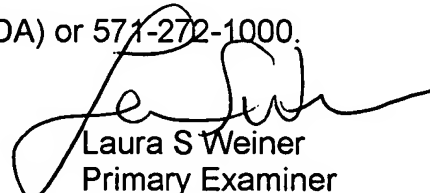
It would have been obvious to one having ordinary skill in the art at the time the invention was made 1 part by weight of the non-crosslinked polymer, 0.1-2 parts by weight of the crosslinked polymer matrix and 3 parts by weight or more of the electrolyte solution, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use 1 part by weight of the non-crosslinked polymer, 0.1-2 parts by weight of the crosslinked polymer matrix and 3 parts by weight or more of the electrolyte solution, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Laura S Weiner
Primary Examiner
Art Unit 1745

September 14, 2006